

(19) World Intellectual Property Organization
International Bureau



25 MAR 2005



(43) International Publication Date
8 April 2004 (08.04.2004)

PCT

(10) International Publication Number
WO 2004/030044 A3

(51) International Patent Classification⁷:

C01B 33/02

(21) International Application Number:

PCT/US2003/030659

(22) International Filing Date:

26 September 2003 (26.09.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/414,052 27 September 2002 (27.09.2002) US

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(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:

1 July 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/030044 A3

(54) Title: METHODS AND SYSTEMS FOR PURIFYING ELEMENTS

(57) Abstract: There are provided methods of purifying a material, comprising melting solid material to form liquefied material, directionally solidifying a portion of the liquefied material; and removing a liquid remainder from the purified solidified material. Preferably, the purified solidified material is melted to form re-liquefied purified material, and re-liquefied purified material is removed. Preferably, the material is positioned in a container as it is being purified. The method is particularly useful for purifying elemental material, e.g., semiconductor material such as silicon and/or germanium, such as recycle scrap silicon and/or metallurgical grade silicon. There are also provided systems for carrying out such methods.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/30659

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C01B 33/02
US CL : 423/348,349,350

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 423/348,349,350

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
WEST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,632,413 B2 (CLARK et al.) 14 October 2003 (14.10.2003), entire document	1-31
A	US 6,368,403 B1 (SCHMID et al.) 09 April 2002 (09.04.2002), entire document.	1-31
A	US 6,090,361 (BABA et al.) 18 July 2000 (18.07.2000), entire document.	1-31
A	US 5,972,107 (SCHMID et al.) 26 October 1999 (26.10.1999), entire document.	1-31
A	US 5,961,944 (ARATANI et al.) 05 October 1999 (05.10.1999), entire document.	1-31
A	US 4,769,107 (HELMREICH et al.) 06 September 1988 (06.09.1988), entire document.	1-31

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"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family		

Date of the actual completion of the international search

30 March 2004 (30.03.2004)

Date of mailing of the international search report

27 APR 2004

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